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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/585,162

06/30/2006

Stefan Morgenstern

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Davidson, Davidson & Kappel, LLC
485 7th Avenue
14th Floor
New York, NY 10018

EXAMINER

PRAGER, JESSE M

ART UNIT

PAPER NUMBER

3745

MAIL DATE

DELIVERY MODE

10/07/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/585,162	Applicant(s) MORGENSTERN ET AL.	
	Examiner JESSE PRAGER	Art Unit 3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/20/09.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/18/2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 11-22 are currently pending.

Response to Amendment

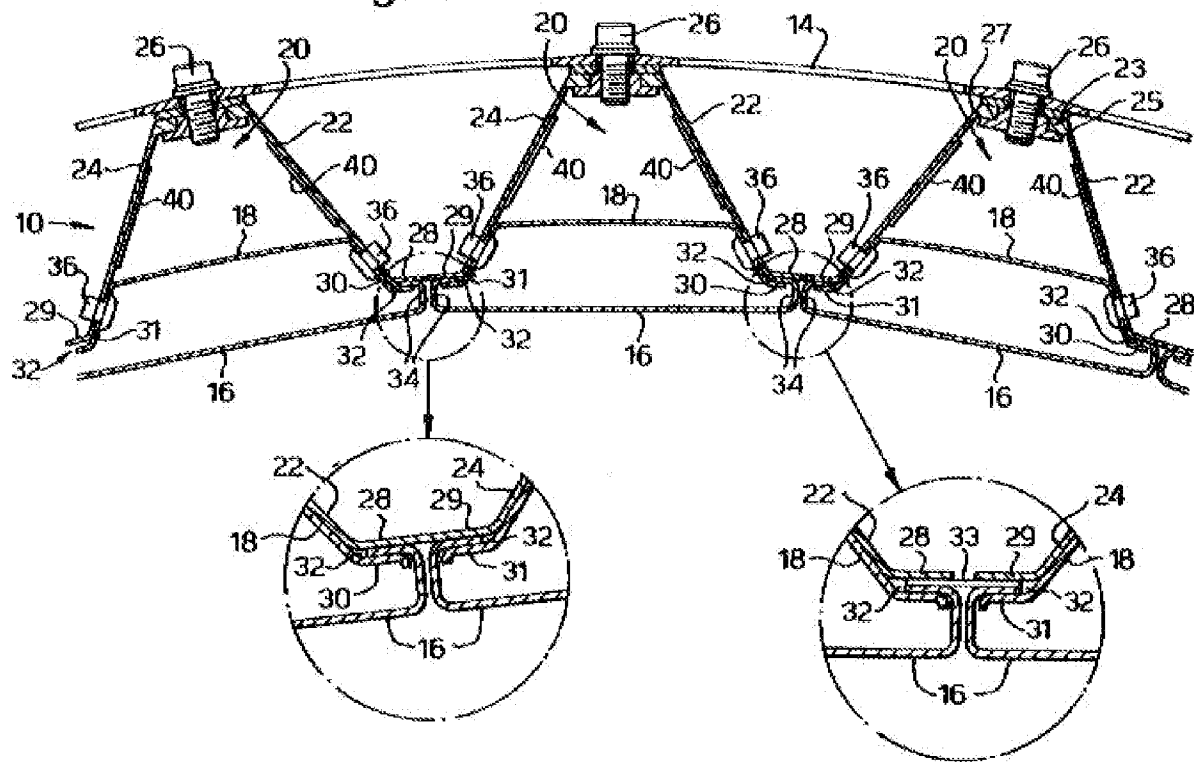
Amendment for claim 11 is accepted.

Response to Arguments

1. Applicant's arguments filed 7/20 have been fully considered but they are not persuasive. Applicant argues that the Hayton reference lacks “each web-like element ... forming a crenelated profile extending in a circumferential direction of the housing”, and includes Fig. 4 to show a crenelated profile extending in the axial direction.

Examiner respectfully disagrees with the statement “the alleged web-element (22, 24) is not crenelated in the circumferential direction”. As stated in the office action, “web elements (22, 24) extend to the first and second plate elements forming a crenelated profile extending in a circumferential direction of the housing.” Figure 3 is a cross sectional view showing that the web-elements are crenelated in the circumferential direction.

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Fig.3.

The crenelated profile is formed by first plate 29 (left) to web element 24, to first plate 23, to web element 22, to second plate elements (28, 29) to web element 24, to first plate 23 to web element 22 to first plate 28. The indented and notched structure makes the profile crenelated in the circumferential direction, and the rejection of claim 11 is maintained since the applicant has not overcome the prima facie case of obviousness.

The depending claims 12-22 rejections are also maintained.

Specification

2. The disclosure is objected to because of the following informalities: "tresses" on par. 16 should be changed to -stresses--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
2. Claims 11-17, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayton et al. (US Patent 6,041,590, herein Hayton) in view of Jourdain et al. (US Patent 5,069,034, herein Jourdain) and in further view of Tanrikut et al. (US Patent 4,361,010, herein Tanrikut).

In regards to claim 11, Hayton discloses a device (Fig. 3) for suspending gas channel elements on a housing of a gas turbine, comprising a plurality of first plate-shaped elements (23) connected to a plurality of second plate shaped elements (28, 29), the first plate-shaped elements and the second plate-shaped elements being connected to one another only by web like elements (22, 24), each web-like element extending to the first and second plate shaped elements to which it is connected and forming a crenelated profile extending in the circumferential direction of the housing.

In regards to claim 11, Hayton does not disclose web-like elements extending approximately perpendicularly to the first and second plate elements to which it is connected, and a length of the housing in the circumferential direction being greater, by a multiple greater than one, than a length of the web-like element in an axial direction.

Jourdain discloses first (8a) and second plates (8b) connected by web elements (8) with the circumferential direction being greater than the width (Fig. 5).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the Hayton device such that the length in the circumferential direction is greater than the length in the axial direction, as taught by Jourdian, in order to reduce material and cost of manufacturing the device.

In regards to claim 11, Hayton does not disclose each web-like element extending in the approximately perpendicularly to the first and second plate shaped elements to which it is connected.

Taunrikut discloses each web-like element extending in the perpendicularly to the first and second plate shaped elements to which it is connected (Fig. 5).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to further modify the Hayton device so each web-like element extending in the approximately perpendicularly to the first and second plate shaped elements to which it is connected, as taught by Taunrikut because this arrangement enables parallel and counter flow cooling which substantially reduces axial and radial temperature gradient over the panel (abstract).

Additionally, Hayton teaches the use of web-like elements extending at an angle relative to the first and second plate shaped elements to which it is connected. Huller does not teach that the specific angle is approximately perpendicular.

Since applicant has not disclosed that having the web-like elements extend perpendicularly solves any stated problem or is for any particular purpose above the fact that the approximately perpendicularly arrangement reduces stresses associated with thermal expansion and it appears that the web-like elements of Hayton would perform

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equally well with extending approximately perpendicularly as claimed by applicant, it would have been an obvious matter of design choice to modify the angle that the web-like elements extend by utilizing the approximately perpendicular arrangement between web-like element and first and second plates as claimed for the purpose of reducing stresses associated with thermal expansion.

In regards to claim 12, the modified device of Hayton comprises the first plate-shaped elements are connected with the housing (14) of the gas turbine and the second plate-shaped elements are connected with at least one channel element (16).

In regards to claim 13, the modified device of Hayton comprises one of the second plate-shaped elements (23) is positioned between two adjacent ones of the first plate-shaped elements (28, 29) such that one end of the said one of the second plate-shaped elements is connected to one of the two adjacent first plate-shaped elements via one of the web-like elements, and an opposing end of the one of the second plate-shaped elements is connected to the other one of the two adjacent first plate-shaped elements via another one of the web-like elements.

In regards to claim 14, the modified device of Hayton comprises the web-like elements extend axially over an entire width of the first plate-shaped elements and/or the second plate-shaped elements.

In regards to claim 15, the modified device of Hayton comprises the device is designed as a closed ring having a crenelated profile.

In regards to claim 16, the modified device of Hayton comprises the device is designed as a ring segment having a crenelated profile.

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In regards to claim 17, the modified device of Hayton comprises the device includes a plurality of the ring segments joined together (Col. 5 lines 1-4).

In regards to claims 19 and 20, Hayton discloses the modified device of Hayton comprises each of the plate element (23) includes a bore hole (41), and each bolt-like mounting element (26) inserted through said bore holes on a housing side of the first plate-shaped elements, thereby connecting the first plate elements to the housing of the turbine.

3. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayton in view of Jourdain, in further view of Tanrikut as applied above to claims 16, and in further view of Roth et al. (US Patent 4,832,568, herein Roth).

In regards to claim 18, the modified device of Hayton comprises the ring segments.

The modified device of Hayton does not comprise four first plate-shaped elements and three second plate-shaped elements being, said three of the second plate shaped elements being connected to four the first plate-shaped elements via six of the web-like elements.

Roth discloses a ring segment (21) with four first-plate elements (on bottom), three second-plate elements (on top), said three of the second plate shaped elements being connected to four the first plate-shaped elements via six connecting web elements (Fig. 3).

Since applicant has not disclosed that having a particular number of first and second plates and connecting web elements solves any stated problem or is for any

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particular purpose above the fact that the structure forms a thermally compliant segmented ring and it appears that the first, and second plates and web-like elements of Hayton would perform equally well with the numbers as claimed by applicant and disclosed by Roth, it would have been an obvious matter of design choice to modify the number of web-like elements and first and second plates as claimed for the purpose of forming a thermal compliant segmented ring.

4. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayton in view of Jourdain, in further view of Tanrikut as applied above to claim 11, and in further view of Pidcock et al. (US Patent 5,435,139, herein Pidcock).

The modified device of Hayton comprises a gas channel element having at least one projection (34), each projection having a recess therein, each recess having elements (30) inserted therein for connecting the gas channel element to the one of the second plate-shaped elements.

The modified device of Hayton does not comprise each recess having one of the second plate-shaped elements inserted therein.

Pidcock comprises a gas channel element (26) having at least one projection (29), each projection having a recess therein (below extended portion), each recess having a plate structure (24) inserted therein for connecting the gas channel element to the plate structure.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the recess such that the second plate-shaped elements is inserted into the recess formed by the projection, as taught by Pidcock et al. because it

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reduces number of elements in the thermally compliant seal, and makes it simpler to assemble.

5. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayton in view of Jourdain, in further view of Tanrikut as applied above to claim 11, and in further view of Rogers (US Patent Application Publication 2002/0197153).

The modified device of Hayton discloses at least one of the second plate-shaped elements with a thermally compliant connection from the gas channel to the second plate for circumferential adjustment of a gas channel element.

Hayton does not disclose the second plate-shaped element has a guide pin.

Rogers discloses a thermally compliant connection with a guide pin (53) for circumferential centering.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hayton's device such that the guide pin is on the surface of the second plate-shaped element because the combination of elements known in the prior art would have predictable results, and the connection taught by Rogers because it transmits circumferential loading to the engine casing and isolates radial loading from the engine casing caused by thermal growth changes of the vane segments (abstract).

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSE PRAGER whose telephone number is (571)270-1412. The examiner can normally be reached on Monday-Friday, 9:00 am - 5:00 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571)272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JESSE PRAGER/
Examiner, Art Unit 3745

9/29/2009

/Edward K. Look/
Supervisory Patent Examiner, Art Unit 3745